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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,541	09/23/2003	Caroline Le-Pierrard	14XT00219 (135960)	2097

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EXAMINER	
KIKNADZE, IRAKLI	

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	10/668,541	LE-PIERRARD ET AL.	
	Examiner	Art Unit	
	Irakli Kiknadze	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23 and 25-40* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23 and 25-40* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. In response to the Office action dated June 17, 2005 the Amendment has been received on September 7, 2005.

Claims 1, 36 and 38 have been amended.

Claim 24 has been canceled.

Claims 1-23 and 25-40 are currently pending in this application.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-23 and 25-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eggelsmann (US Patent 4,024,424) in view of Hansen et al. (US Patent 6,556,654 B1).

With respect to claims 1 and 36, Eggelsmann teaches (Fig. 1) an X-ray emitter comprising: an anode (2); a cathode (3); a vacuum evacuated body (1) in which the anode (2) and the cathode (3) are placed; an opening in the body; and a part of a high-voltage connector (such as an insulator (4) associated to a high-voltage cable system) placed in the opening, the connector closing off the opening in a vacuum-tight manner,

wherein the connector (4) is subjected to a vacuum on one side of the cathode and to ambient air on the opposite side; and wherein the outside the vacuum evacuated body (1) is subjected to atmospheric pressure and ambient air (column 2, lines 30-34). Eggelsmann fails to teach the complete structure of the high-voltage connector. The high-voltage connector structures for x-ray tubes comprising the cathode insulator attached to the high-voltage cable systems are well known in the x-ray art. Hansen teaches a system securely maintaining a high-voltage cable within an x-ray tube comprising the cathode insulator (50) attached to the high-voltage cable system (Figs. 1 and 2; see abstract; column 7, lines 14-41 and column 8, lines 5-33). It would have been obvious to one of ordinary skill in art at the time the invention was made to employ the high voltage cable/cathode insulator arrangement as suggested by Hansen in the apparatus of Eggelsmann for delivering the high-voltage to the cathode of the x-ray tube.

With respect to claims 2, Eggelsmann teaches that the connector supports the cathode (Fig.1).

With respect to claims 2 and 3, Hansen teaches that the connector supports the cathode. A cathode terminal (110) acts as an intermediate spacer between the connector and the cathode (such as cathode terminals (110)) (Figs. 1 and 2., column 8, lines 5-22).

With respect to claims 4-6, Eggelsmann teaches that the vacuum evacuated body is made of metal (column 2, lines 45-49).

With respect to claims 4-10, Hansen teaches that the vacuum evacuated body is made of copper (metal having an atomic number 29) (column 1, lines 39-72).

With respect to claims 11-15, Hansen teaches that the body (22) comprises a cylindrical portion forming the opening, the connector being placed and fastened into the cylindrical portion (Figs.1 and 2., column 8, lines 5-22).

With respect to claims 16-23 and 25-33, Eggelsmann teaches that the connector is made from aluminum oxide ceramic (column 2, line 32).

With respect to claims 16-21, Hansen teaches that the connector is made from ceramic (column 8, lines 20-22).

With respect to claims 25-29, Hansen teaches that the connector is made from an eclectically insulating oxide (column 8, lines 20-22).

With respect to claims 30-35, Hansen teaches that the connector composed of electrically insulating ceramic (column 8, lines 20-22). Using the electrically insulating ceramics for the high-voltage connectors, especially aluminum-based ceramics, for example based on alumina or aluminum nitride, for good dielectric properties, high thermal conductivity and low thermal expansion coefficient are well known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the high-voltage connector for x-ray tube comprising aluminum, or been aluminum nitride based, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use where the general conditions of a claim are disclosed in the prior art.

With respect to claim 40, Hansen teaches that the connector has a generally cylindrical external wall that is securely fastened in a vacuum-tight manner to a generally cylindrical portion of the vacuum evacuated body (Fig. 2; column 8, lines 5-22).

With respect to claim 38, Eggelsmann teaches (Fig. 1) a method of manufacturing an X-ray emitter comprising: an anode (2); a cathode (3); a vacuum evacuated body (1) in which the anode (2) and the cathode (3) are placed; an opening in the body; and a part of a high-voltage connector (such as an insulator (4) associated to a high-voltage cable system) placed in the opening, the connector closing off the opening in a vacuum-tight manner, wherein the connector (4) is subjected to a vacuum on one side of the cathode and to ambient air on the opposite side; and wherein the outside the vacuum evacuated body (1) is subjected to atmospheric pressure and ambient air (column 2, lines 26-34). Eggelsmann fails to teach the complete structure of the high-voltage connector. The high-voltage connector structures for x-ray tubes comprising the cathode insulator attached to the high-voltage cable systems are well known in the x-ray art. Hansen teaches method of manufacturing an x-ray emitter comprising: providing a body (22) capable of being made vacuum-tight; forming an opening in the body; placing an anode (24) and a cathode (26) in the body (22) (column 7, lines 14-27), placing a high-voltage connector in the body; fastening the connector into the opening, the connector closing off the opening in a vacuum-tight manner (Figs. 1 and 2; see abstract; column 7, lines 14-41 and column 8, lines 5-33). It would have been obvious to one of ordinary skill in art at the time the invention was made to employ

method connecting the high voltage cable/cathode insulator to the x-ray tube as suggested by Hansen in the invention of Eggelsmann for securely delivering the high-voltage to the cathode of the x-ray tube.

With respect to claim 39, Eggelsman teaches that the connector is made of insulating aluminum oxide ceramic (column 2, line 32).

Response to Arguments

4. Applicant's arguments with respect to claims 1-23 and 25-40 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irakli Kiknadze
December 7, 2005
IK

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER